

REMARKS

Claims 1-10, all the claims pending in the application, stand rejected. Applicants respectfully submit that no further amendments to the claims are needed to distinguish over the prior art for the reasons subsequently provided.

Claim Rejections - 35 U.S.C. § 103

Claims 1-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Rokunohe et al (6,680,453) in view of Furuta et al (6,538,224). This rejection is traversed for at least the following reasons.

The invention can be appreciated by reference to an exemplary but non-limiting embodiment that concerns a single mechanism that operates a single insulated rod 14 and causes it to drive a single movable contact 8 between grounded positions where a grounded contact 12 is coupled to a fixed contact 11 appended to a first conductor and between a second fixed contact 9 coupled to the first conductor and a fixed contact 10 that is coupled to the second conductor.

This permits a single mechanism with a single bridging electrode to provide (1) a switchable coupling between first and second conductors in a gas insulated switch environment as well as (2) grounding.

Rokunohe et al

Rokunohe et al teaches a metal case 9 filled with a gas providing a three-position disconnecter that has three separate electrodes aligned along a common axis. A movable electrode 19 is provided between a fixed grounding electrode 25 and a fixed power electrode 21b. The fixed electrode 21b and movable electrode 19 are each surrounded by a shield 8. The movable electrode 19 is driven by mechanism comprising a motor-driven shaft 24 coupled to a gear 20 that engages a rack 216 having a length L1. Electrode 19 can travel axially between positions that places it alternatively in contact with each of electrode 21b and ground 25, and it may serve as the movable contact portion for both the disconnecter 2 and the earthlink switch 3 of Fig. 16.

As previously asserted, a significant difference between the structure of Rokunohe et al and the present invention, particularly as illustrated in Figs. 1-6, is that the movable conductor is driven by a rod 14 in the present invention, rather than a gear and rack arrangement as in the reference. This difference permits the electrically insulating operating rod to extend through the first electrode in the direction of movement of the movable electrode, thereby placing the mechanically operated portions of the switch outside of the high voltage environment of the switch. Applicants previously noted that Rokunohe et al places the gear and pinion mechanism within the operating switch environment, thereby creating potential for high voltage breakdown, short circuit and mis-operation.

In the present Office Action at page 3, the Examiner admits that Rokunohe et al does not disclose the electrically insulating rod extending through the first fixed electrode. Indeed, the motion of the electrode 19 is provided by a structure 24 extending orthogonal to the direction of movement of the electrode 19 (col. 9, line 9). There is no teaching or suggestion in the reference that the moveable electrode 19 can be moved by a co-axial operational rod. Indeed, such movement would be incompatible with the structure of Rokunohe et al, as it has a ground plate sealing the lower portion of the switch, with no teaching as to how or why that plate can be opened. Rokunohe et al does warn, however, that extraneous objects should not move into the upper portion of the switch where there is a “high voltage electric field space” (col. 8, lines 61-65).

The Examiner looks to Furuta et al for a structure and motivation for modifying Rokunohe et al so that it uses an operational rod that moves axially and extends through the first electrode, rather than a rack and gear mechanism.

Furuta et al

The Examiner refers to Figs. 12 and 13 of Furuta et al for a disclosure of an operating rod 25 that extends “in the direction of movement of a moveable electrode.” While there is no element labeled with the reference number 25 in either Figure, the Examiner appears to be referring to the dotted rod that is labeled in Figs. 5 and 14. There, an operating mechanism 28 that moves rod 25, lever 24 and link 26 also is shown. More importantly, Applicants note that

Furuta et al does not teach that the rod passes through any fixed electrode, as claimed. Thus, Furuta et al does not even offer the same rod-based structure that can avoid a high voltage discharge problem as overcome by the present invention. In the absence of any structure in either prior art reference that meets an express claim limitation, the rejection would be overcome.

Nonetheless, the Examiner maintains his position that one skilled in the art examining both references would find that Furuta teaches an approach to moving the moveable electrode by having an operating rod move “in the direction of electrode movement.” The Examiner fails to note that Furuta is only a circuit breaker and does not have a three way switch where the moveable electrode can couple the electrode to a high voltage stationary electrode or a ground electrode. The Examiner also fails to note that Furuta does not teach the rod passing through an electrode. Indeed, because it is only a circuit breaker, the Furuta structure does not face such problem.

Nonetheless, the Examiner then asserts that it would be obvious to apply the rod structure applicable to Furuta’s circuit breaker as a replacement for Rokunohe’s rack and gear structure (1) because Rokunohe et al would want to use an operating rod that moves in the direction of movement of the electrode 22, (2) despite the fact that the bottom plate and ground electrode present formidable structural and engineering problems, and (3) despite the fact that Furuta only concerns a circuit breaker and not a switch.

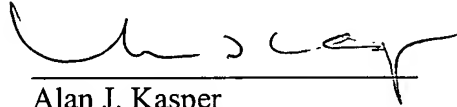
The Examiner clearly is using hindsight in taking this position. The motivation and teachings required by the US patent law to support even a prima facie case for obviousness is not present in this situation. Thus, Applicants again respectfully submit that under basic principles of U.S. Patent law, none of the references teach or even suggest the mechanism taught by the present invention. On this basis, Applicants strongly urge the Examiner to agree that the rejection is overcome and that all of the claims continue to be patentable over the cited prior art.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Response under 37 C.F.R. § 1.116
Application No. 10/642,653

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Alan J. Kasper
Registration No. 25,426

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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